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(54) Title of the Invention: **Disposable incontinence article**

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SPECIFICATION

1. **Title of the Invention**

Disposable incontinence article

2 **Claims**

(1) Disposable incontinence article comprising a pant member, and a pad member attached to the inside face thereof in the crotch portion.

(2) Disposable incontinence article according to claim 1 wherein:

a. said pant member comprises a composite sheet of soft, expanded sheeting 0.6 -6 mm in thickness having nonwoven fabric juxtaposed and partially bonded to at least one face thereof; and

b. said pad comprises at a minimum an absorbent core and liquid pervious sheeting covering the surface thereof.

(3) Disposable incontinence article according to claim 1 wherein said pad member separates the two side portions of the waistband, and the side portions comprise members for fastening these during wear.

(4) Disposable incontinence article according to claim 1 wherein said soft, expanded sheeting has in addition to the cells thereof 1 -10 mm holes representing an open area of from 3 to 60%.

(5) Disposable incontinence article according to claim 1 wherein said composite sheet has said soft, expanded sheeting bonded in a planar-dilated state to said nonwoven fabric.

(6) Disposable incontinence article according to claim 1 wherein bonding of said nonwoven fabric to said soft, expanded sheeting is accomplished by ultrasonic welding.

(7) Disposable incontinence article according to claim 1 wherein bonding of said two sides of the waistband is accomplished by ultrasonic welding.

(8) Disposable incontinence article according to claim 2 wherein said composite sheet is water repellency treated.

(9) Disposable incontinence article according to claim 1 wherein said pant member has stretch elastic band zone on both sides of the crotch portion thereof and/or the waistband thereof.

3. Detailed Description of the Invention

The present invention relates to a disposable incontinence article for use by incontinent individuals.

To date, known art diapers, and particularly disposable diapers, are widely used for incontinence, but such diapers have a number of drawbacks making them unsuited to incontinent individuals (particularly ambulatory ones), such as poor fit to the body, inability to stretch so as to conform to bodily movement of the wearer, poor breathability and comfort, bulkiness, and poor [illegible].

It is therefore a principal object of the present invention to provide a novel disposable incontinence article that overcomes the aforementioned drawbacks.

As shown in Figs. 1, 2 and 5, article 1 of the invention comprises a pant member 2 and a pad member 3 attached to the inside face thereof in the crotch portion. Pant member 2 may be provided [as an article] joined together in advance, preferably by ultrasonic welding, so as to produce a finished pant configuration, i.e. with the two sides of the waistband inseparable, as shown in Fig. 1; or with the two sides of □□□□ [sic; meaning unclear] the waistband separated, as shown in Fig. 2, one side of □ [sic] the waistband being provided with fastening members 4, for example, tape fasteners having a multitude of fiber-like projections with fastening function projecting from a base material, or pressure sensitive adhesive tapes, buttons, cords or similar arrangements, these being anchored to the other side of the waistband when putting the article on, to assemble it into a pant configuration.

As shown in Figs. 3 and 4, pant member 2 comprises a soft, expanded sheet 5 of polyurethane or the like, on whose inner face, outer face, or both is juxtaposed preferably "no-binder" nonwoven fabric 6 composed of hydrophilic and/or hydrophobic fibers, the two materials being spot bonded together, preferably by ultrasonic welding, the bonded portions being indicated by symbols 8. To enhance the stretch properties of composite sheet 7 it is preferable for expanded sheet 5 to be dilated in one or both directions when juxtaposed to and unified with nonwoven fabric 6; leak resistance against bodily fluids may

be enhanced through optional treatment with a known art water repellent, such as a silicone based product. At a minimum it will be sufficient to treat the nonwoven fabric 6; where nonwoven fabric 6 is already composed of hydrophobic fibers, [treatment] will not be necessary. In preferred practice, expanded sheet 5 is provided with a multitude of holes, separate from the cells [in the material], the size of which will differ with the extent [of dilatation] where the expanded sheet 5 is dilated, but is generally from 1 to 10 mm, preferably 2 to 5 mm, with the open area thereof being from 3 to 60%, preferably 10 to 20%.

Optionally, stretch elastic band zones 9, 10 may be provided on both sides of the crotch portion and/or the waistband of pant member 2 as shown in Figs. 1 and 2, which may be accomplished, for example, by integrally interposing ribbon or tape of rubber, polyurethane etc. between the expanded sheet 5 and the corresponding portions of the nonwoven fabric 6.

Pad member 3, on the other hand, is composed of an absorbent core 12 of milled pulp or similar material stacked on a liquid impervious sheet 11 of plastic film or other such material, and covered with a liquid pervious sheet 13 of nonwoven fabric or the like, as shown in Fig. 5. Bonding of pad member 3 to pant member 2 may be accomplished by means such as adhesives, ultrasonic welding, double-sided pressure sensitive tape or the like, to readily render it immobile during handling and use.

According to the present invention, the composite sheet 7 which is the base material of the pant member 2 is produced by partial bonding of soft, expanded sheet 5 and nonwoven fabric 6, and is therefore markedly superior to known diapers in terms of stretch pliability, breathability and feel to the skin. These objectives are achieved without the risk of rupture due to movement during wear, providing functionality similar to that of cloth pants. Additionally, the pad member 3, by virtue of secure attachment to the inside face of the pant member 2 in the crotch portion, as well as the close fit of the pant member 2 to the body, is maintained in fixed contact with the crotch area of the wearer, so that excreted liquid does not leak from the pad member 3. The means for attaching the pant member 2 to the pad member 3 is double-sided pressure sensitive tape or other such

releasable means, and as long as the pant member 2 has not been soiled by liquid in the course of wear, a new pad 3 may be attached to the pant member, allowing it to be reused.

The article of the invention set forth herein affords a number of advantages, making it advantageous for wear by incontinent individuals, particularly ambulatory incontinent individuals.

4. Brief Description of the Drawings

Fig. 1 is a perspective view of an article of the invention preformed into a pant configuration; Fig. 2 is a development plan view of an article of the invention for assembly into a pant configuration; Fig. 3 is a fragmentary perspective view of a composite sheet comprising nonwoven fabric bonded to one side of an expanded sheet; Fig. 4 is a fragmentary perspective view of a composite sheet comprising nonwoven fabric bonded to both sides of an expanded sheet; and Fig. 5 is a sectional view taken along line X-X in Fig. 2.

1 ... article 2: pant member
3 ... pad member 4: fastening members
5: expanded sheet 6: nonwoven fabric
7: composite sheet 8: bonded portions
9, 10: stretch elastic band zones 11: liquid impervious sheet
12: absorbent core 14: liquid pervious sheet

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Fig. 1

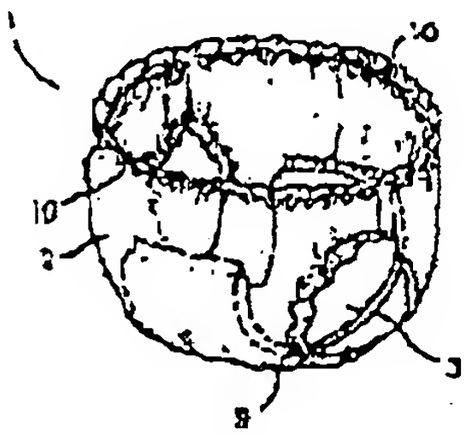

Fig. 2

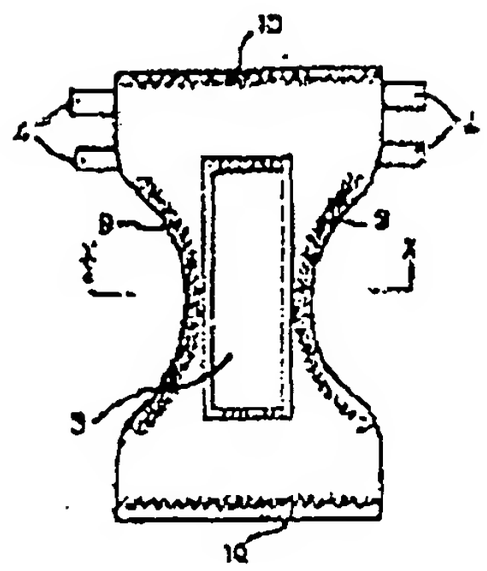

Fig. 3

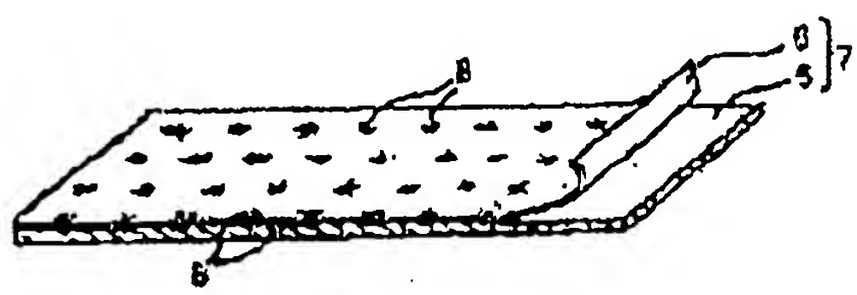

Fig. 4

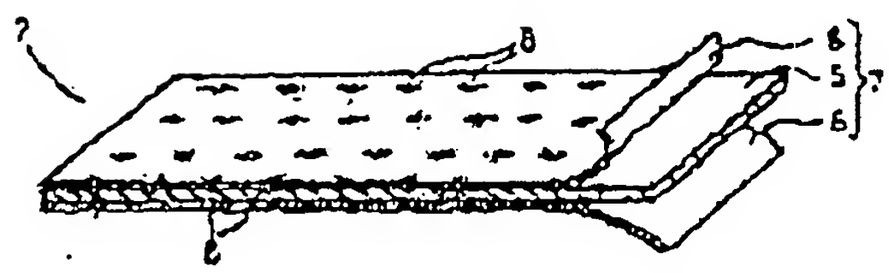

Fig. 5